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Current Conservation

**Quantifying the
Compromise**

Eviction for Conservation

Aversion to Relocation

**No Roads,
Only Directions**

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Jul 2008

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Typical aerial view of the Bereg plain, Hungary.
Forest patches are clearly identifiable in the mosaic-like landscape.

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Quantifying the Compromise

Developing the Road Map and Protecting the Forest Network

Ferenc Jordán, Tibor Magura, Béla Tóthmérész, Vera Vasas, Viktor Ködöböcz

Conservation policy is necessarily imperfect, as it always targets a compromise between the contrasting needs of nature and society. A frequent source of conflict is how to develop a traffic network while trying to minimise its negative effects on the connectivity of natural habitats. Roads must be frequently considered as impenetrable barriers for many species, while migration is important for these species, if not the only remaining key to their survival. Both the traffic system and the landscape inhabited by various species may be regarded and analysed as large-scale units. Network analysis provides various tools for providing quantitative, measurable compromises. It helps in setting conservation priorities objectively by ranking each forest patch according to a measure of importance.

The reason why connectivity is essential for many species is that isolated populations face a number of dangerous effects, including genetic and demographic mechanisms, that could possibly lead to extinction.

Connectivity can guard against extinction due to genetic or demographic causes by ensuring the possibility of migration, and thus, gene flow. After all, this is the major mechanism counteracting the loss of diversity—first at the level of the genes, then at the level of species.

In a recent study, the expected effects of a planned highway were assessed from the viewpoint of how the connectivity of a forest habitat network will be reduced. The highway would connect Hungary and Ukraine, forming a strategically important transport route in the European system. The forest network was evaluated based on ground beetles, typical and representative members of forest communities.



Photo: Béla Tallósi

Carabus intricatus, inhabiting closed canopy deciduous forests of hills and mountains. In the Bereg plain, it lives only in a few forest fragments.

The present structure of the forest network was characterised and the importance of forest patches in maintaining connectivity was quantified by network analysis. Then, the authors compared the effects of the three planned tracks on forest connectivity and suggested a fourth, less deteriorating solution.

Of course, many viewpoints must be considered when a traffic network is designed. Legal, logistic, and financial analyses are unavoidable. Yet, protect-

ing nature calls for one more aspect: studying the landscape ecological effects of highways. Network analysis offers a tool for comparing different solutions objectively, from a large-scale perspective, in a quantifiable way. It can only be hoped that decision-makers will also consider this very biological aspect.

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Ranchers & Jaguars

Fred Nelson

One of the most extraordinary wildlife recovery stories in recent North American history first broke out in 1996, when rancher Warner Glenn captured the first photos ever taken of a wild jaguar in the United States of America. The encounter, which occurred while Glenn was hunting mountain lions near his home in the Arizona-New Mexico borderlands, was the first documentation of jaguars in the USA since the early 20th century. Subsequently, further sightings and the use of infrared camera traps in the region have revealed the regular occurrence of a handful of male jaguars in southern Arizona and New Mexico. All of these animals are long-range wanderers from the northernmost population of jaguars, a group of about 120 animals, which resides in Mexico's Sonora region.

With the re-discovery of the Americas' largest felid in the USA, at least as transients, a range of new cross-border conservation initiatives have emerged during the past decade. While some environmental organisations continue to campaign for stricter habitat protections for the jaguar in the USA borderlands under the United States Endangered Species Act, the fate of this sub-population primarily hinges on developing effective conservation strategies in the animals' northern Mexico home range.

The Winter 2007 edition of PERC Reports, published by the Property and Environment Research Center in Bozeman, Montana, contains an article¹ describing the emergence of several conservation initiatives using collaborative and incentive-based strategies to conserve this jaguar population. Efforts in Sonora, Mexico have been spearheaded by a coalition of Mexican and American conservation organisations, most notably the Defenders of Wildlife, the Northern Jaguar Project, and the Naturalia.

The Northern Jaguar Project has been at the heart of efforts at the ground level, leading efforts to purchase 45,000 acres of land in the heart of the jaguars' range in Sonora, Mexico. More creatively, the project has initiated a Wildcat Photo-Survey Contest on other private ranches surrounding the new reserve. Ranchers are paid between USD50 and USD300 for photographs taken by infrared camera traps positioned on their land, creating a direct economic incentive for ranchers to allow jaguars on their property.

Across the border, in Arizona and New Mexico, the Malpai Borderlands Group is one of the most prominent community-based conservation initiatives in the USA. A coalition of ranchers manage a mosaic of private and federal lands at the ecosystem scale, working to

reintroduce fire as a tool to recover degraded rangelands and developing collaborative strategies for endangered species conservation.

Other innovative ideas that are being floated, according to the PERC Reports article, include marketing and labeling beef from ranches that agree to permit jaguars to live on their property as 'jaguar-friendly beef', and efforts to channel private sport hunting revenues to landowners in Sonora, Mexico.

For more information visit:

<http://www.northernjaguarproject.org/> (Northern Jaguar Project)

<http://www.malpaiborderlandsgroup.org/> (Malpai Borderlands Group)

Endnote:

¹ <http://www.perc.org/perc.php?id=1016>

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Displacement and Relocation from Protected Areas:

Towards a Biological and Historical Synthesis

Mahesh Rangarajan and Ghazala Shahabuddin

The displacement of people has been a central feature of 20th century nature conservation all over the world. This issue of relocation has lately acquired centre-stage in debates on biodiversity conservation in India. Between 1969 and 2001, the area under national parks and sanctuaries in India grew ten-fold to cover 5 % of the total landscape.

This expansion of protected areas was accompanied by displacement of an estimated 49,000 to 120,000 forest-dwelling people during the 20th century. Further large-scale displacements from tiger habitats are planned during the next decade, in response to the recent crises of forest degradation and local animal extinctions.

When and how should such relocation be done, if at all? How does one analyse the efficacy of such relocation in terms of conservation and social justice? These questions are easier to pose than to answer.

Closely linked to these questions are the sharp differences between the

dominant cultures in the practice of conservation, represented by biologists on the one hand, and social scientists on the other. Biologists tend to assess the issue of relocation in terms of the viability of habitats, ecosystems, and endangered species, and point to the relatively tiny proportion of habitats that house intact populations of large-bodied vertebrates. The sustainability of ecosystem use by forest-dwelling groups is seen, by most biologists, to be doubtful, as is the possibility of coexistence of wildlife with human populations inside protected areas, whose mandate is long-term conservation.

In contrast, social scientists tend to see the issues of equity and justice as central to the sociological and historical analysis of conservation processes. Studies of displacement, and particularly their role in biodiversity conservation, have shown that impoverishment and dispossession of the displaced is a common feature. Such analyses have also shown why displacement, even when a biological success, can impose high costs on under-privileged groups, particularly itinerant and indigenous communi-

ties. Social scientists tend to support the notion of coexistence between forest-dwelling people and nature, and believe that displacement should not be attempted at all, given its high costs, historically, to the culture and economies of local people.

The set of case studies reviewed in this issue of *Current Conservation* were commissioned with the aim of finding a middle ground between these two streams in conservation scholarship. These cases, based on rigorous field study, point to a couple of important issues that were not so obvious even a few years ago. First, biologists (along with forest managers, who generally tend to align with them on this question) need to be sensitised to the socioeconomic and cultural needs of resident peoples. So also, social scientists do need to understand the ecological requirements of endangered species. Such sensitisation has to be coupled with coordinated engagement of social scientists, biologists and forest managers on critical questions such as whether, how, and where, to relocate. This is still a far cry given the current divide.

Second, the wide extent of the problem of displacement, across the developing world, is brought out starkly through these studies. The approach adopted for wildlife conservation has been similar across continents, with relocation being a central goal of management, until very recently. Such a focus has, in many cases, precluded possibilities for local-community participation at any level, whether it be decision-making, sustainable extraction, benefit sharing, or joint protection. At the same time, the entry of destructive development projects into areas vacated by communities is becoming alarmingly common, showing that there may be larger forces at work in protected area decision-making than are immediately visible.

Village relocation has clearly emerged as an important issue in conservation that needs to be examined far more closely than it has

been in the past. This issue, which is fast becoming the central pivot of the international conservation discourse, urgently calls for informed engagement across disciplines. Public discussion of this issue has recently expanded, as is seen by a spate of studies on conservation-induced displacement, including those in this issue of *Current Conservation*. Rigorous field-based research has led to more informed discussion than in the past, and has created possibilities for seeking a middle ground between the two dominant cultures of conservation. Field research also makes likely greater accountability and transparency in bureaucracy due to the emergence of independent sources of information.

In the case of India, the issues of equity and justice impinge on conservation today in larger ways than they did in the past. The maturing of electoral democracy and

the assertion of once marginal groups has not only made coercion more problematic but has also opened up spaces for more just and balanced approaches in the pursuit of biodiversity conservation in the future.

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Eviction for Conservation: A Global Review

Dan Brockington & Jim Igoe

Displacement resulting from the establishment and enforcement of protected areas has troubled relationships between conservationists and rural groups in many parts of the world. This paper examines one aspect of displacement: eviction from pro-

TECTED AREAS. Opinions about the natures and scale of this problem are divided. Some authors have stated that the literature on evictions from protected areas offers ‘a massive cataloguing of past, recent and ongoing abuses’, while others assert that ‘to date little empirical evidence exists to substantiate

the contention that parks are bad for local people’. We believe that the truth lies somewhere between these two positions. There are many cases of displacement which the latter authors are ignoring. But the first statement exaggerates the quality, extent and order of knowledge. Our grasp of the subject is simply not as good as they claim.

We carried out a global review of protected area evictions, looking for as many as we could find in published literature. The reports we

collected covered only 184 protected areas. Many were scant or poor quality often giving no details at all (such as dates, numbers of people, reasons) about the moves. It is highly likely that much has gone unreported. But we can get some inkling of the geography of evictions from these studies. Evictions have been most common in Africa, South and South East Asia and North America; relatively few are reported in this literature from South and Central America, Australia, Europe, the former Soviet Union and most of the Caribbean and the Pacific.

We also learnt something of the history of eviction. Most protected areas from which evictions have been reported were set up before 1980. This is not a global trend, but the consequence of the strong patterns in North America and Sub-Saharan Africa which are well represented in the cases we have studied. In some regions (Central America, South and South East Asia) the opposite trend is apparent, with more protected areas for which evictions are reported established after 1980. Regardless of the trends in establishment, we should not infer the timing of evictions from the date of establishment. In many cases laws providing for the removal of people from a protected area were not established until long after it was set up.

But there are remarkably few studies published on eviction before 1990, and a surge of publications thereafter. The surge does not appear to have been driven by a spate of recent evictions. Rather they were mainly the result of a spate of historical investigations. This has characterised a number of investigations of protected areas in Southern Africa and Eastern Africa. It has been a particularly strong feature of scholarship emerging



Photo: Dan Brockington

A former village recently vacated and bulldozed in an Indian Tiger Reserve

from North America. In other regions (such as South America) the relative lack of historical re-examination, and the general paucity of eviction cases, suggest that the practice has been relatively rare.

Where eviction is still prevalent, it is often bound up with other debates about environmental change or degradation (Tanzania), ecosystem services (Thailand), or the appropriate development strategy for undeveloped people who live in parks and who need to be moved out so that they can become proper citizens (Botswana). Large conservation NGOs were not generally prominent in eviction operations.

Eviction remains one of the techniques conservation requires to achieve its goals. The issue is how it is carried out, and with what consequences to local people. Unfortunately many of the important players in conservation circles are yet to come up with a coherent response over how to handle evictions humanely.

Given the preliminary nature of this review, and the poor quality of the literature which we were deal-

ing with, we are hesitant to use it to describe the state of eviction from protected areas, but we have suggested a number of hypotheses which we hope other studies of this phenomenon will test. Perhaps most importantly our review also showed that there were far more important things going on than just eviction. It remains the most dramatic and devastating impact, the most violent thing a state can do to its law-abiding citizens. But it is not the most prevalent problem that many people face in and around protected areas and there is a real danger that a focus on eviction will divert attention away from more pressing issues.

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Land Restitution and Protected Areas in South Africa

Jane Carruthers

Many protected areas have come into being because part, or all, of the area was denuded of people in order to promote a nature conservation agenda. South Africa is no exception. South Africa has had a democratic government since 1994 when apartheid ended. One new constitutional requirement is that people who lost their right to land for racially-based reasons after 1913 (the year of the notorious Native Land Act) are entitled to restitution. By March 2007, nearly 80,000 claims had been recorded and 74,417 settled through the transfer of 810,292 ha of land and compensation payouts totalling ZAR 2 billion. Some claims have been against protected areas that are run by organs of the state. In many parts of the world land claims against protected areas are resisted by the government, but this is not the case in South Africa, where redress is a national priority. However, another national priority is sustainability and biodiversity conservation, and the difficult objective has been to reconcile the two. State forest plantations totalling 18.28 million ha have been handed over to claimants who will continue the process of sustainable extraction.

South Africa is agriculturally poor and eco-tourism is often the most sustainable land use. With

this in mind, the state has encouraged those with claims against national parks, game reserves and other protected areas to use their post-restitution ownership to benefit from the cash that is generated by tourism, thus accelerating the delivery of education and other social goals and creating employment.

In handing over to local communities their ownership of the Great St. Lucia Wetland Park (a World Heritage Site on the coast of KwaZulu-Natal), the Minister of Agriculture and Land Affairs said in 2007, “For the settlement of this claim, the state has committed a total of about ZAR 89

million... I am pleased that the communities have agreed to restoration of rights without physical occupation, and that the current use of the land will be maintained... The skills transfer through training, mentorship and experiential management must take place...”

Laudable as this goal is, reaching it requires careful post-restitution management. It is often at this stage that fresh challenges arise. One example is the Kalahari Gemsbok National Park in the arid Northern Cape Province, where a community of about 300 people, the Khomani San, were given 25,000 ha within the park and 43,000 ha of



Photo: Jane Carruthers

Members of the San community selling curios at the entrance to the Kalahari Gemsbok National Park

farmland just outside it after a successful land claim. In spite of being the richest landowners in the area, they were soon divided into 'traditionalists' (who wanted to revert to a forager lifestyle) and 'moderns' (who wanted to engage with the tourist industry and other enterprises). Thus while government officials, lawyers, donors, and non-governmental organisations had helped facilitate a successful land claim so as to restore lost land and dignity, they did not foresee the splintering of the group, and the rancour and great loss of money that ensued. This case may well provide caution for social scientists and planners to contextualise each land eviction carefully, taking both history and community into account.

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Aversion to Relocation: A Myth?

Rucha Ghate and Kim Beazley

Population displacement from protected areas is a contentious issue. To date, social science literature has largely been against displacement, given the social injustices and deprivations that have, in the past, resulted from it. Based upon over a decade of research on the Tadoba Andhari Tiger Reserve (TATR), Maharashtra, India, by SHODH: The Institute for Research and Development, we would like to raise a few supplementary points.

When SHODH began its baseline socio-economic study of the six villages located within the TATR, we held the common opinion that displacement has a detrimental effect on oustees and should thus take place only as a final resort, if at all. However, our subsequent research has revealed that the TATR villagers are largely not averse to the idea of relocating, and in fact many actively want to relocate.

It is the harsh reality of residing within a protected area that has made displacement a preferred option for most. At present, exclusionary regulations are largely enforced in the TATR, despite village presence within the Reserve's boundaries. Consequently, village occupants are viewed as 'encroachers' on their own land, and collecting minor forest products, cultivating crops, and grazing livestock is restricted. For the same reason, and also due to their remote locations, the TATR villages also do not receive sufficient external development assistance. They therefore lack access to all-weather roads and thus to markets, they lack schools beyond fourth grade, and there is only one hospital. They are also isolated from the wider economy and the livelihood options that it offers, and thus have little option but to engage in forest-dependent occupations that are neither profitable, nor a preferred choice for most.



Photo: Kim Beazley

A former building in old Botezari



Photo: Kim Beazley

Botezari villagers at the relocation site



Photo: Kim Beazley

A view of the relocated village Bhagwanpur

A member of Botezari village likened living in Tadoba to residing at the bottom of a well, unable to escape and take advantage of the outside world, while a former *sarpanch* (head) of Jamni village was resolute that having seen her children grow up isolated from educational opportunities and thus illiterate, she would not see her grandchildren grow up the same way.

The legal obligation to move the TATR villages has been discussed for almost two decades. To date, two of the villages (Botezari and Kolsa) are in the process of moving out of the Reserve to a site that they themselves have selected. Two other villages (Navegaon and Jamni) have also expressed their desire to shift, particularly due to increased instances of crop depredation by wild animals, and loss of human life and livestock to tigers. However, for reasons known only to the authorities, these villagers' willingness to relocate has so far been ignored. The remaining two villages (Rantalodhi and Palasgaon), though not so enthused by the idea of displacement, have come up with various conditional charters of demands.

While these demands are very high, this in part reflects the vil-

lagers' political awareness. Indeed, there are certain indications that their demands are negotiable and thus that these villages too have some interest in relocation.

It is also important to note that just because negative assessments of past displacements dominate the literature, it need not be impossible to engineer a relocation that raises local living standards, and reduces, rather than re-establishes, previous poverty levels. Indeed, the current relocation of Botezari and Kolsa, despite taking a long time to come to fruition, looks set to have many positive consequences for the villagers in question.

While there have been numerous complications along the way, and the villagers that have already shifted are currently facing a range of problems as they settle in, the relocation site holds a level of amenities considerably greater than that in the original villages, and also greater than that in nearby villages outside the Reserve. Moreover, the relocation site is close to urban centres and all-weather roads, which should enable villagers to reduce their unwanted dependence upon forest-related occupations that are also low paying. Therefore, in our view, to assert that displacement is

inadvisable and socially unacceptable in all situations is just as problematic as it is to advocate involuntary displacement.

These points do not seek in any way to undermine the pressing need to explore the more theoretical, academic issue of the social (and for that matter biological) efficacy of the 'fortress' approach to conservation. Yet in the meantime, it is important not to fall into the trap of arguing against relocation as 'a matter of social principle'. As long as it is conducted in a sensitive and participatory manner, relocation has great potential to facilitate socio-economic development rather than inhibit it.

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Rough Time in Paradise: Claims, Blames and Memory Making Around Some Protected Areas in Kenya

Lotte Hughes

I use historical examples of forced relocation, or alleged relocation, from protected areas in Kenya to challenge some of the points made by Rangarajan and Shahabuddin in their 2006 *Conservation and Society* article. I suggest that the debate thus far (at least within these pages) has failed to discuss the role and uses of social memory, especially in relation to land restitution claims. Also, that relocation should be examined in deep historical focus; anthropological analyses, although valuable, do not suffice. Imaginings of environment and ‘pastness’ by both European settlers and (in this case) indigenous Africans should be factored in and deconstructed.

Maasai communities were forcibly moved into reserves by the British colonial government in British East Africa (later called Kenya) in the 1900s. This was not done for conservation purposes, although portions of the areas to which the Maasai were moved were later set aside for national parks or game reserves. One of these areas — the Maasai Mara Game Reserve (MMGR) — has recently become the focus for restitution claims.

But from a historical — rather than a human rights — perspective, it is a very poor example because it can be proved that there was no forced eviction from the

area that became MMGR, and few people were moved at all. No one lived there all year round, because of tsetse flies. Moreover, as a result of wildlife tourism revenues, the MMGR is today a milk cow for Maasai communities living around it, and for the Maasai-controlled county councils which manage it — facts that are conveniently ignored by those who claim it ought to be ‘returned’ to the community that effectively already owns it. Historical and contemporary land losses have been elided in Maasai social memory, leading to claims that all relocation from areas that became parks involved force. This is inaccurate, and is an example of what happens when ‘memory’ (and its uses in political agitation) becomes confused with ‘history.’

I also discuss criticism of my doctoral work, which questioned the veracity of Maasai oral testimony that I used when describing the environmental effects of the colonial-era moves and their impact on human and stock health. I debunk some of the points made by critics, comparing biological and historical approaches to my original case study and the disjuncture between the two. I advocate a fusion of disciplinary approaches, in order to produce more nuanced analyses.

Further, I discuss how the MMGR provides a good example of the need

to look beyond rhetorical claims and to examine historical facts. I draw on contemporary oral and archival sources in order to prove that very few people were moved to make way for the reserve in 1948, and that the migration was not coerced.

This is set against claims by indigenous rights activists, which tend to be accepted uncritically by their western sponsors, that the creation of the MMGR deprived the Maasai of some of their best land. These claims imply that the eviction was forced, when, in fact, Maasai elders reportedly ‘gave’ the Mara to the government. In conclusion, it is not correct to assume that all displacement from protected areas was coerced, just because politicians and pundits say so, or that forced removals took place at all in order to create certain parks. What scholars of social memory call ‘purposeful forgetting’ may be a factor on both sides of the fence—settler and indigenous.

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The Sundarbans: Whose World Heritage Site?

Annu Jalais

The article, 'The Sundarbans: Whose World Heritage Site?' uses the Sahara India Group's advertisement of their project on 'virgin islands' to discuss how representations of the Sundarbans have always tried to do away with humans. The piece argues that one needs to address the omission of people from images of the Sundarbans because such images, whether for wildlife preservation, or in bids at rebranding the place for global marketing, end up increasing the alienation between the inhabitants of the Sundarbans and its wildlife.

The Sundarbans have often been portrayed as devoid of people. They were first perceived as a repulsive place; the British later thought of them as a 'wasteland.' The British gazetteer-writer, Hunter, in 1875, devoted an entire book to the Sundarbans. In this, after writing at great length about the forest and wild animals he only mentioned the people in passing, referring to them as a 'few wandering tribes' and classifying them after long lists of wild animals and plants. This attitude of those in power towards the inhabitants of the Sundarbans region as 'unimportant' or even 'disposable' took a tragic turn in 1979 when the 30,000 to 35,000 East-Bengali refugees, who had sought refuge on

the island of Morichjhanpi, were brutally evicted.

They had come with the hope that they would be allowed to stay (as the Communists had suggested when they were in opposition). But the fact that it was a Tiger Reserve (since 1973), was the excuse to turn out the refugees. The refugees who refused to leave either died of starvation or cholera, or were killed. The Sundarbans islanders often referred to this episode as 'the massacre of Morichjhanpi'; it marked for them the beginning of a politics of betrayal by both the urban elite as well as tigers. They argued that even the tigers, taking their cue from the Government's treatment of them as lesser mortals, had started feeding on them.

Thus, for the Sundarbans islanders, while the tiger's image was gaining prominence and was being used to frame ethical debates around the issue of wildlife parks by various trans-national animal-based charities in bids to obtain funding, the very animal was turning, like their Government, into an alien. The islanders started to see the state's investment in tourism and wildlife sanctuaries as instituting an unequal distribution of resources between them and wild animals.

The matter took an ironical twist in 2000 when the Government proposed setting up a nuclear power plant on the island of Jharkhali and then again in 2002 when the Supreme Court ordered the eviction of fishermen from the island of Jambudwip in view of the proposed Sahara project.

What appears ironical to the islanders is that although refugees were evicted from Morichjhanpi on the grounds that the forest needed protecting, the Government now wants to install a power plant and a large tourist project. They argue that while the world is shrinking and people from outside the Sundarbans are increasingly interested in their tigers, their own options of making a decent livelihood are disappearing, and their very presence is seen as illegitimate or even criminal in what has become a trans-national World Heritage Site.

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Displacement and Relocation from Protected Areas: International Law Perspectives on Rights, Risks, and Resistance

Doreen Lustig and Benedict Kingsbury

Mahesh Rangarajan and Ghazala Shahabuddin, in their paper on government displacement of people from Project Tiger reserves, published in *Conservation and Society* (2006), connect the dismal results and frequent injustices of current policy on conservation and displacement in India to a fundamental incoherence in the very framing of this policy. Towards the end of their paper, the gloom of their accounts of the recent and the distant past is alleviated by the hopeful conjecture that the broadening of participation within Indian democracy may soon propel the adoption and implementation of policies, on these issues, that are more holistic, comprehensive, rational, and just. Our paper addresses the issues they raise from the standpoint of international law and institutions.

Since no global social bargain exists under which proposed trade-offs between conservation and displacement can be evaluated and disadvantaged interests compensated, human rights normative texts have frequently embodied a deontological rights model. According to this model, rights provide particularly powerful or weighty reasons, which override social aims or reasons of

other sorts, as illustrated in Ronald Dworkin's metaphor of rights as 'trumps'. The World Bank practice on displacement presents a risk model as an alternative to the rights model prevalent in human rights institutions. Indeed, this terminological shift (from rights to risks) may attenuate the focus on the rights of the displaced persons. Nevertheless, neither the rights model favored in human rights law, nor the risks model favored in the World Bank for operational purposes, have proven very effective in safeguarding the rights and interests of persons threatened with conservation-induced or development-induced displacement. Rights models tend to degrade into subjective balancing formulas at the point of application, producing erratic outcomes that may protect neither people nor conservation areas. Risks models with their instrumentalist calculations may better reflect operational considerations but tend to degrade the deontological importance of human dignity.

These difficulties often lead to a characteristic legal 'solution'—to focus on procedures through which policies are determined and implemented, rather than on normative language and substantive values. These procedural guarantees in-

clude ex-ante requirements of opportunities of full participation, access to information, notice, fair hearings, reasoned decisions with opportunities to seek review, and fairness in rule-making and decision-making processes. They also include basic norms such as non-discrimination, non-arbitrariness, and independence of decision-makers. Ex-post, they require mechanisms of accountability, and effective remedies. Procedural approaches drawing on administrative law principles, currently being assessed in the 'Global Administrative Law' research project, can act as an instrument of resistance and change.

Legal institutions such as courts, when faced with the challenge of actually implementing a human rights normative framework in the context of development induced displacement, have frequently focused on more procedural issues, and have adopted a balancing approach. The Supreme Court of India's 2000 ruling concerning the Sardar Sarovar Project (SSP) illustrates this tendency. Rather than first establishing the boundaries and essence of the fundamental rights of the tribal people that were at stake and then assessing the extent to which these rights could properly be infringed

because of conflicting public interests advanced by the SSP, these public interests were viewed as competing values within the scope of the rights in question, potentially restricting their legal vindication.

Whether it is desirable to juridify the political process, with courts using a procedure-oriented global administrative law approach and balancing among conflicting interests, is a hotly contested issue. It is possible that participatory and procedural requirements will help open up the deliberative space and shape outcomes in the ways Rangarajan and Shahabuddin hope, but this is likely to differ depending on precise politico-institutional circumstances, including the presence of flourishing social movements, and an open institutional culture in which the various critiques are heard and seriously considered. Should human rights advocates strive to challenge the setting altogether and take up a position outside it? Conversely, should they follow the strategy of initial resistance—triggering some eventual change in attitudes among

the establishment institutions—but then eventually reengage in these institutions? And if so, to what extent should it be embedded in a democratic setting, one in which the process of translation is bound to democratic constraints of accountability, transparency and participation and informed review? As the experience in the Indian context attests, human rights advocates often try to mobilise to win on the balancing ground, by proceeding cautiously, experimentally, guided by local knowledge rather than grand design. Such attempts might change the institution or strive to challenge the balance of force as it is embedded in current power relations in the field. Does the move of NGOs from resistance to institutionalised petitions and briefs signal a narrowing down of the political space? The Global Administrative Law paradigm does seem, in some cases of development-induced or conservation-induced displacement of people, to have provided NGOs with the essential ‘took-kit’ to become the watchdogs of international institutions such as the

World Bank, and to have enabled these NGOs to exercise some influence through domestic courts. At the same time, cases such as the Narmada controversy bring to the fore the price of the institutionalisation and juridification of the struggle.

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Displacement and Relocation Redux: Stories from Southeast Asia

Pamela McElwee

Displacement and relocation from protected areas is an important concern in Asia. Policies to create new parks or strengthen enforcement in existing ones, nationa-

lise forest reserves, and implement stricter conservation rules on private lands under the guise of biodiversity or watershed management, have been resulting in significant relocations and dislocations of people.

In Thailand, for example, more than half a million hill-dwellers have been blamed for deforestation and damage to watersheds and threatened with relocation. Smaller scale resettlement projects, such as



Photo: Pamela McElwee

A stone marker commemorates the former site of Dong Con village, which was relocated out of the Cuc Phuong National Park in Vietnam

those around local protected areas, often affect hundreds to thousands of people every year in countries like Indonesia, Thailand, Laos and Vietnam.

However, it is important to ask whether there is any evidence that relocation actually has a positive effect on the conservation of protected areas. Examples from Vietnam show that, in fact, relocation does not necessarily provide the grounds for better biological integrity. This is primarily because relocation of local populations has often entailed their being replaced by other groups—hunters and poachers, immigrants, or other business interests—that have a far greater negative impact on protected areas than the original populations.

An example of this process can be seen at Cuc Phuong National Park in North Vietnam, where around a thousand people (members of ethnic minorities, mostly Muong) were relocated out of the park in the 1980s because they were perceived to be a threat. In 2000, the government decreed that a new national highway running north-south linking Hanoi to Ho Chi Minh City would be built, and that it would need to bisect Cuc Phuong. The road was planned to run straight through some areas of the park that had previously been ‘saved’ by the relocation of Muong villages. Despite protests from park managers, environmentalists, and even some politicians, the plan was approved and construction commenced.

There are numerous other examples from Vietnam where resident local (often indigenous) peoples were either excluded from park resources or resettled, only to be replaced by others. For example, around the Song Thanh Nature Reserve in central Vietnam, indigenous Katu have been losing their traditional hunting and forest product collecting grounds as reserve borders are increasingly being enforced. At the same time that the Katu are being excluded, recent reports indicate that large numbers of ethnic Vietnamese hunters from outside the province have moved in and are bribing guards to let them hunt, while in another part of the reserve a gold

mining company has been given a license to operate. Park rangers often turn a blind eye to the hunters and gold miners because they can be bribed to do so, while the Katu, who enter the park to obtain subsistence goods, do not have the cash to pay the guards. The Katu then become the target of interdiction, and perhaps further resettlement in the future.

Resettlement is presented as a ‘solution’ to perceived localised threats to protected areas. However, I argue strongly that there is very good evidence, particularly from Vietnam, that blaming internal populations for threats to parks, rather than external economic and political factors, is misguided. Resettlement is frequently used as a tool to disempower (often minority or marginalised) local people who occupy valuable lands or strategic places, while empowering stronger actors such as local governments, state agencies, and private development interests. These processes have long existed, but now often come under the name of ‘conservation.’

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No Roads, Only Directions

K. H. Redford and S. Sanderson

Social scientists and indigenous advocates have critiqued conservation organisations for displacing local people in order to create protected areas (PAs). By pointing out that some protected areas, including Yellowstone, the model for the modern concept of national parks, were established by expelling local people, the critique shines a harsh light on conservationists and can undermine the moral arguments for protecting biodiversity. The competing ethical positions of those defending wildlife and wild places and those defending the rights of people living in the same area has led to a tortured, ideological stand-off with no obvious solution and little documented positive experience to inform it.

Protected areas now cover approximately 20 million sq. km of the globe. While this may suggest that a lot of wild areas are protected, less than 9 % were established to conserve biodiversity in the absence of human use. This means that most protected areas have people living in them, engaged in a full range of human activities, and therefore do not fully conserve biodiversity.

In some of the stricter protected areas, there is no doubt that local communities have been displaced. However, there is little documented evidence that this is a systematic and widespread problem. Even in protected areas that are not supposed to have human inhabitants, it is not clear to what extent enforcement was the cause of displacement.

Some critics of protected areas have amplified their argument by claiming that protected areas have displaced tens of millions of people. However, published numbers are often speculation based on disparate case studies or include assumptions of human population densities applied across diverse regions.

At the same time, conservation organisations are not helping to alleviate the potential for human displacement. For too long, conservationists have failed to clearly identify the conservation goals for each protected area. In the absence of a clear articulation of targets and conditions, it is impossible to determine if, and how, local human populations threaten conservation goals. Such planning would help

determine to what extent displacing local populations should even be considered. Toward that end, the Wildlife Conservation Society has developed landscape-scale conceptual modelling to define conservation targets and evaluate the relative importance of the actions of people living in or near a park.

The debate between allowing people full access to a protected area versus prohibiting access results in ideological skirmishes. Yet reconciling academic disciplines will do little to alleviate the struggles between poor people and endangered species conservation. A more careful study is required at the scale where humans and wildlife live out their activities and needs – not in the abstract. Conservation organisations must work to fill the information, knowledge, and policy gaps, while conservation and human development organisations should work on interdisciplinary engagement tailored to specific sites. Unfortunately, we do not have an ethical court to evaluate the rights of the



Photo: K. H. Redford

Ocelot skin in Kayapo village, Brazil



Photo: K. H. Redford

Yuqui hunters in the Bolivian Amazon

remaining tigers against the rights of the resident people. Nor does our political and economic system assign a value to the protection of the biosphere upon which we all depend. Nevertheless, we must secure the guarantees of public servants and private actors that they will act with the respect and care due to the world's remaining wildlife and to the rural people who co-inhabit these under-served areas.

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Shifting Livelihood Options and Changing Attitudes of Communities in the Garo Hills, Western Meghalaya

Karthik Teegalapalli

The Garo hills in western Meghalaya in India comprise gentle undulating forested slopes at the edge of the country, adjacent to the Bangladesh plains. Although a significant portion of the state is reported to be under forest cover (ca. 70 %), ownership of over 65 % of land in the state by autonomous

councils, shifting cultivation, and intense hunting pressure are some of the factors that thwart traditional conservation themes here. Further, in the last decade, mining and monoculture plantations (e.g., cashew and citrus orchards), have replaced past occupations of communities in the Garo hills, such as paddy and shifting cultivation.

The Garos belong to the Tibeto-Burman stock; they drifted into eastern India through Tibet in 5,000 B.C. in search of fertile lands to cultivate. More than thirty villages, locally called *akings* are interspersed between the Balpakram National Park (220 sq. km) and the Baghmara Reserve Forest (44.4 sq. km) in the South Garo Hills district (Khan

et al. 1997). The landscape is mottled with patches of shifting cultivation fallows at varying stages of succession, active farms, settlements, orchards, paddy fields in the valleys, and waterbodies. The forests in the South Garo hills are significant for many reasons—they harbour species such as the tiger (*Panthera tigris*), clouded leopard (*Neofelis nebulosa*), Himalayan yellow-throated marten (*Martes flavigula*), hoolock gibbon (*Hoolock hoolock*), serow (*Capricornis sumatraensis*), Asian elephant, Chinese pangolin (*Manis pentadactyla*), the stump-tailed macaque (*Macaca arctoides*), and have high levels of endemic floral diversity. It is therefore imperative to conserve these lands to provide a buffer and corridors for wildlife in the adjoining protected areas.



Photo: Samrakshan Trust

The landscape with active cultivated patches, fallows and secondary forests

Jhum cultivation

Shifting cultivation, also called forest agrarian system or *jhum* cultivation in India, is a form of cultivation that has been practised across the world since the neolithic epoch to the present age. Although this method of farming may seem ecologically destructive, since it involves slashing and burning of forest, it provides subsistence livelihoods for at least 300-500 million people

worldwide. Essentially agriculturalists, the Garos have been practicing shifting cultivation for a few thousand years to grow rice, ginger, millets, tapioca, chillies, yam, and other vegetables in the biodiversity-rich tropical forests of the region. Research indicates that for *jhum* cultivation to be at least economically viable, if not ecologically sustainable as well, the fallow cycle (period within which land is re-cultivated) should not be less than a decade. For ecological recovery following shifting cultivation, a minimum period of 25 years for birds, 30 years for frog and lizard communities, and 50 years for plants has been envisaged from *jhum* fallows in Mizoram (Raman *et al.* 1998; Pawar *et al.* 2004). However, in the Garo hills, fallows are re-cultivated within 4-5 years due to increasing human population and unavailability of sufficiently old fallows, making the practice unsustainable for both people and biodiversity.

A relatively recently proposed model in this respect is to amalgamate *jhum* cultivation with agronomical inputs, to assuage its impacts on biodiversity as well as to improve productivity (Malik 2003). In the neighbouring West Garo Hills district, it has been demonstrated that apart from rice, all the needs of a few families can be adequately met from homestead agriculture. Home gardens—plots ranging from 0.5 to 2 ha per family, used for cultivation of vegetables, medicinal shrubs and herbs, and trees for firewood—have also been recommended.

Orchards—Monoculture plantations

The impacts of shifting cultivation can be considered to be relatively benign compared to the impacts of monoculture plantations on biodiversity as well as people. Many studies have shown that monocultures of economically important species such as teak, rubber, areca nut,

cardamom and coconut harbour low animal diversity, comprising mostly ubiquitous species, in comparison with natural vegetation types. In terms of the socio-economic impacts of plantations, cultivating orange orchards has not improved the income of people in the region, as the plantations fruit only for two to three years and precious habitat for wildlife is lost to such conversions. Often, people clear larger tracts of land the following year anticipating better profits. In the year 2004, encouraged by the North Eastern Council-funded Citrus Rejuvenation Programme, several households in the neighbouring West Garo Hills district abandoned *jhum* and established citrus orchards. The decision was a disaster, and the following year 51 households re-embraced their traditional practice of *jhum* cultivation. Similar projects have been planned or initiated for cultivating areca nut and rubber in the region.

Mining

The state is estimated to contain about 600 million tonnes of coal reserves and about 5,000 million tonnes of limestone. The detrimental impacts of coal mining on the environment and people have been documented from Jaintia hills in the eastern tip of the state. Among other impacts of rat-hole mining for coal, such as soil erosion, pollution of air and water, and loss of biodiversity, the region has also become perilously vulnerable to earthquakes. In the South Garo hills, the issue appears to be intensifying as each year the hills in the area are strip-searched for coal. This is a particularly serious issue near the Siju Wildlife Sanctuary where the coal residue is deposited in the Simsang river, which provides valuable fish and water

resource for the communities further downstream. The sulphur in the coal residues renders the water acidic, thereby affecting the fish-catch and the productivity of agricultural lands. The major obstacle to mitigating the impacts of coal mining in the area is that the livelihood of thousands of people is linked to the vocation. And the consequence of these lands being community-owned is that the Government is left with few avenues to abate the damage.



Photo: Samrakshan Trust

Mining close to Siju Wildlife Sanctuary

Hunting

Systematic studies on the hunting practices of the Garos are largely lacking. During the last two years, Samrakshan Trust has been working with the communities in an attempt to improve livelihoods and get an idea of the human-wildlife and the human-elephant conflict in the landscape. Hunting is likely to be relatively higher in the villages adjoining the Balpakram National Park, where gunshots were often heard and the skin of a Chinese pangolin and a pet stump-tailed macaque were encountered by the author.

Human-animal conflict

The Garo hills harbour one of the densest populations of Asian elephants as well as humans (about 53 persons / sq. km in the South Garo hills; Census of India 2001) in the country. Data on crop-raiding by elephants collected by Samrakshan Trust personnel between 2005 and 2006 in six of the *akings* indicate a twin-peak, one in the months of July-August and another in November-December. These peaks correspond with the harvest of summer and monsoon rice, respectively. The Garos supposedly revere elephants and affectionately refer to them as *mama dalgipa* (big uncle) and plead with them not to raid their crops. However, five carcasses of elephants were recorded by Samrakshan Trust from various *akings* within a year² and recently the Garos have started consuming elephant meat. Since not all elephant deaths get reported, this is indicative of the high intensity of human-elephant conflict in the region. A fact that complicates the situation is that the Forest Department has been lax in disbursing compensation for crops raided by elephants; INR about 40 crore is the outstanding amount to be compensated till the year 2002.

Some feasible options

A majority of the conservation issues in the Garo hills seem to have their roots in the lack of environment-friendly livelihood options for the communities. Some of the practical alternate livelihood options for the communities are:

- ❖ Several interesting trails along the Simsang river, along the Siju Wildlife Sanctuary, to the Chutmang peak (tallest peak in the South Garo Hills district: 1,023 msl) and other parts of the Balpakram National Park are available and can be accessed from

the villages in the landscape. Promoting responsible eco-tourism on these routes, employing locals as guides, and ensuring that the economic benefits of such endeavours reach the communities will alleviate livelihoods of at least a section of the communities.

- ❖ Sustainably marketing pottery, textiles and basketry handicrafts, which the Garos are adroit in producing, can also help improve the abject conditions of the communities of *akings* that are remote and bordered by the Balpakram National Park.

- ❖ According to the management plan of the Balpakram National Park, inclusion of land from villages present beyond the south-western boundary of the Park is still pending. This land, if acquired, can provide an important supplement to the Balpakram National Park and bolster its protection. A relocation programme that adequately addresses the socio-economic and cultural issues involved will not only provide the people from isolated villages better amenities but will also ensure better protection of the Balpakram National Park.

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BOOK REVIEW

Resilience Thinking: Sustaining Ecosystems and People in a Changing World.

Brian Walker and David Salt.
Island Press (2006).

Reviewed by Fred Nelson

Integrative Thinking for a Changing Planet

“Whenever we pick out anything by itself, we find it hitched to everything else in the universe,” noted John Muir over a century ago. As human knowledge grows and so does the complexity, not only of ecological systems’ biophysical components but also of their social, cultural, and institutional dimensions, it has become increasingly apparent that our way of organizing knowledge along disciplinary boundaries—particularly the relatively hard boundary between social and natural sciences—greatly limits our understanding of the world.

During the past twenty years, an ambitious group of multidisciplinary scientists called the Resilience Alliance¹ has emerged to try and develop a truly integrative framework for thinking about com-

plex systems. They tellingly use the term ‘social ecological systems’, in recognition of the counterproductive nature of treating the human and biophysical components separately. As the group’s work has grown and expanded, they have developed a web site and blog, a thick edited volume describing their ideas called *Panarchy* (Island Press, 2002), and an open-access journal, *Ecology and Society*².

The Alliance’s latest effort, authored by one of its leading scientists (Walker) in collaboration with a popular science writer (Salt), *Resilience Thinking*, provides the most accessible introduction to the group’s work, ideas, and concepts. The authors’ objectives are to provide “a plainly written account of what resilience is all about, and how a resilience approach to man-

aging resources differs from current practices.” Resilience Thinking succeeds masterfully in blending complexity and simplicity. Rich in ideas with the power to change the way people think about the world, the book is nevertheless parsimonious, at only 160 pages. The writing is lucid and manages to avoid shrouding ideas within the fog of technical jargon. Chapters alternate between five essays describing the key concepts the resilience framework has developed for understanding change in complex systems, and case studies providing practical illustrations of the concepts’ real-world application.

This format is highly effective. The authors skillfully deploy a diverse range of metaphors and practical examples to elucidate their framework. For example, one of the core concepts in resilience thinking is the idea of ‘thresholds’—effectively the same idea as the ‘tipping point’ popularized by Malcolm Gladwell’s best-seller of that name. Walker and Salt describe change in complex systems through the analogy of a tennis ball rolling around the bottom of a concave basin. Imagine that the ball is the condition of an ecosystem, while the basin in which the ball moves represents the set of possible states of the system. As the ball moves within the basin its condition changes, but so long as it is within a single basin the system maintains the same basic characteristics or functions. Now imagine that the basin lies contiguous with other similar basins, and if the ball moves enough in the basin it may roll over the rim and into another adjacent basin. When that happens, a system has crossed a

threshold, and the new basin represents a system with fundamentally different dynamics, feedbacks, and functions. The ball-and-basin metaphor illustrates the key concept that change in social ecological systems is neither linear nor incremental, but often happens suddenly.

This aspect of change is central to the other fundamental concept in the resilience framework, the ‘adaptive cycle.’ The authors describe how change in complex systems tends to follow a pattern defined by four stages. Young systems undergo a phase of rapid growth, when the potential for new types of relationships or functions is high. As the system grows, it builds up more and more energy, relationships become more fixed, and the resilience of the system, or its capacity to respond to change and absorb shocks, declines. Eventually this build up of energy and declining adaptability leads to a release or collapse phase. The collapse then cycles back into a phase of reorganization, which then leads back into the rapid growth phase.

In describing these cyclic phases, Walker and Salt use examples from both biological and social systems. It is equally useful to apply the adaptive cycle to ecological change—say, processes of forest growth and succession, which invariably cycle through phases of growth, release or disturbance, and reorganization—as to social systems and human enterprise. While the case study chapters are uniformly instructive and effectively complement the conceptual chapters, if there is one major weakness to the book it is that

all of these examples come from developed countries—Western Europe, Australia, and North America. Given the intense pressures facing social ecological systems in the developing world, and the high rates of social, ecological, and institutional change currently occurring in those systems, the true test for resilience thinking will be how useful it is to understanding and anticipating system change in such settings. It is hoped this will be a major focus of the Resilience Alliance’s outputs moving forward.

In a world of accelerating change at multiple scales and increasingly interconnected social ecological systems, integrative thinking is not a creative luxury but a necessity. Resilience Thinking contains critical concepts and ideas for understanding this complexity and managing it as effectively as possible. It should become required reading for conservation practitioners and scholars around the world.

Endnote:

¹<http://www.resalliance.org/1.php>

²www.ecologyandsociety.org

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Reference styles in list:

Articles from journals: Pomeroy, M., R. Primack and S.N. Rai. 2003. Changes in four rainforest plots of the Western Ghats, India. *Conservation and Society* 1: 113-136.

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